Components.

Virtual Lance Burner (VLB)
Side wall and EBT mounted device for oxygen injection. Fuel is either gas or oil.

Lance Manipulator
In addition to the wall mounted devices, BSE has pioneered the slag door lancing technology with highly efficient consumable lances.

Virtual Lance Injector (VLI)
VLB-type device achieving the shrouding effect without gas (only applicable for special furnace operations, e.g. hot metal).

Solid Material Injector
Side wall and EBT mounted device for injection of solid materials like carbon, lime and fines.

Tiltable VLB with vertical tilting motion providing different injection angles to meet various process requirements.

Advantages.

- Highest possible energy transfer into scrap and steel.
- Improved and continuous slag generation.
- Faster decarburisation and less oxygen consumption.
- Consistency from heat to heat.
- Compatibility with various input materials, operation types and steel grades.
- Complete system solutions, tailor-made to the customers’ individual EAF situation.
- Design based on own operational experience for highest efficiency and easy maintenance.
- Extremely rugged construction ensuring operation with an availability of nearly 100%.

NEW!

Tiltable VLB

NEW DESIGN!

Exclusively available at BSE
BSE Offgas System Solutions
Clean and efficient!

Backed by the long standing knowhow based on our own steel production, BSE provides analysing tools, engineering and key components for complete offgas systems that improve productivity and cost efficiency – along with strict compliance with environmental legislations.

Components.

Fluid Dynamic Model (FDM)
Simulation of all heat and dust sources influencing the building ventilation by using a scaled Plexiglas® replica of the melt shop. The FDM, provided and performed by our subsidiary Bender Corporation, is an easy, accurate and economical tool to understand and improve the inside shop conditions.

Computational Fluid Dynamics (CFD)
Investigation with the aid of computer modelling to look into details of critical items and optimisation of mixing and distribution, pressure drop and local exhaust hoods. The Computational Fluid Dynamic guarantees a smooth engineering process and highest performance of the designed dedusting systems.

Efficient Deducing Control (EDC)
Smart control and visualisation of the entire offgas system. The EDC collects realtime information of all key components, analyses it and anticipates accordingly.

Advantages.

- Improved dedusting efficiency in Am³/kWh.
- Reduction of specific dedusting costs in Cost/Am³.
- Less dust deposit in the ducts.
- Better bag house utilisation by reduced and stable temperature.
- Simplification of emission control.
- HTQ as an economical solution for dioxin/furan reduction.
- Lower pressure drop in the DDC duct.
- Most economical analysing tools for improvement of building ventilation with FDM and optimisation of component details with CFD.

HTQ valve rack with intelligent regulation of water flow ensuring a constant offgas outlet temperature and protection of the bag house against peak temperatures.
**Measurement & Control**

Trust is good, control is better!

**Components.**

**MultiROB**
Implementation of a standard industrial robot upgraded with special equipment and features for steel plant operation at EAF, LF or BOF.

Basic functions: temperature measuring/sample taking (with automatic cartridge exchange) plus wide range of further development options and applications.

**TempSamp Manipulator (TSM)**
Classic BSE tool giving precise information about steel temperature and quality while increasing the safety of operators considerably. Rigid steel construction with base plate, swiveling arm and water-cooled lance carrying system. Various solutions for EAF, LF and converter – tailor-made for local circumstances.

**Lance Manipulator LM.2**
Space-saving combination of slag-door injection with Temp Samp unit on one column with two independent swiveling arms.

**Delay Recording System (DRS)**
Process analysis tool for steel plants that don’t have a Level 2 automation system yet. The DRS is operated by the melter at the furnace and helps in the fight against delay times, thus providing a huge potential for productivity increase.

**NEW!**
Cartridge exchange rack for automatic sample taking/temperature measuring cycle.

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**BSE Engineering and Delivery Guarantee**

In Budget. In Schedule. In Expected results.

**Basic principles.**
- Detailed steelmaking-process-oriented approach, based on the operational experience of our own BSW steel plant, one of the world’s most efficient mini-mills.
- Close partnership with the customer for incorporating their invaluable know-how and setting of goals for mutual success.
- Implementation of state-of-the-art technology under close consideration of all neighboring equipment.
- Design and solutions selected under strict consideration of the “easy to maintain and operate” aspect.
- Optimum utilisation of already existing equipment.
- Calculation of expected performance values, benefits and payback estimations.

**Project concept.**
- Detailed investigation of current situation on site, customer needs and process requirements.
- Elaboration of individual and tailor-made solutions.
- Project execution and management in close cooperation with the customer.
- Applying the “KISS” (Keep it simple and stupid) principle for maximum operational reliability.
- Startup and commissioning with personnel with operational background from our own production facilities.

**Your key advantages.**
- Increase of efficiency and productivity.
- High availability at lowest possible operation and maintenance cost.
- Optimum capital planning and employment by:
  - Meeting the warranted contract price and estimated customer budget
  - Meeting the delivery time and required downtime for installation
  - Meeting the calculated and expected performance figures and economical results

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BSE provides solutions that even exceed the customer’s expectations… engineering excellence at BSE… combined with local experience of the customer… are all key factors for successful projects!
Since 1983, the Badische Stahl-Engineering GmbH (BSE) has been acting as a service provider for increasing the efficiency and productivity in the electric steel industry worldwide.

BSE is a sister company of the Badische Stahlwerke GmbH (BSW), one of the world’s most efficient Electric Arc Furnace steel plants.

This unique partnership between BSW and BSE ensures that all products and services provided by BSE are not just based on mere theory, but on more than 4 decades of own proven operational experience.

Badische Stahl-Engineering GmbH
Robert-Koch-Straße 13
D-77694 Kehl/Germany
Phone (+49) 7851/877-0
Fax (+49) 7851/877-133
eMail info@bse-kehl.de
www.bse-kehl.de

BSE America
1811 Sardis Road North, Suite 210
Charlotte, NC 28270
Phone (704) 553-1582
www.bse-america.com

BSW and BSE – a unique partnership that will help you to reach even ambitious goals.